What Is Claimed Is:

1. A latent fluxing agent comprising a composition which when heated to a temperature above about 140°C liberates a phenolic compound or a carboxylic acid-containing compound.

2. The composition of claim 1, wherein the composition is an α-alkoxyalkyl ester of a carboxyl-containing compound.

3. The composition of claim 1, wherein the composition is an α-alkoxyalkyl phenyl ether.

4. The composition of claim 1, wherein the composition comprises a reaction product of a carboxylic acid and a vinyl ether.

5. The composition of claim 4, wherein the carboxylic acid is selected from the group consisting of 3-cyclohexene-1-carboxylic acid, 2-hexeneoic acid, 3-hexeneoic acid, 4-hexeneoic acid, acrylic acid, methacrylic acid, crotonic acid, vinyl acetic acid, tiglic acid, 3,3-dimethylacrylic acid, *trans*-2-pentenoic acid, 4-pentenoic acid, trans-2-methyl-2-pentenoic acid, 2,2-dimethyl-4-pentenoic acid, *trans*-2-hexenoic acid, *trans*-3-hexenoic acid, 2-ethyl-2-hexenoic acid, 6-heptenoic acid, 2-octenoic acid, (+/-)-citronellic acid, (R)-(+)-citronellic acid, (S)-(-)-citronellic acid, undecylenic acid, myristolic acid, palmitoleic acid, oleic acid, elaidic acid, *cis*-11-eicosenoic acid, erucic acid, nervonic acid, *cis*-3-chloroacrylic acid, *trans*-3-chloroacrylic acid, 2-bromoacrylic acid, 2-(trifluoromethyl)acrylic acid, 2-(bromomethyl)acrylic acid, 2-cyclopentene-1-acetic acid, (1R-*trans*)-2-(bromomethyl)-2-methyl-3-methylenecyclopentaneacetic acid, 2-acetamidoacrylic acid, 5-norbornene-2-carboxylic acid, 3-(phenylthio)acrylic acid, *trans*-styrylacetic acid, *trans*-cinnamic acid, *alpha*-methylcinnamic acid, *alpha*-phenylcinnamic acid, 2-(trifluoromethyl)cinnamic acid, 2-chlorocinnamic acid, 2-methoxycinnamic acid, *cis*-2-methoxycinnamic acid, 3-methoxycinnamic acid, 4-methylcinnamic acid, 4-methoxycinnamic acid, 2,5-dimethoxycinnamic acid, 3,4-(methylenedioxy)cinnamic acid, 2,4,5-trimethoxycinnamic acid, 3-methylindene-2-carboxylic acid, *trans*-3-(4-methylbenzoyl)acrylic acid, oxalic acid, malonic acid,

methylmalonic acid, ethylmalonic acid, butylmalonic acid, dimethylmalonic acid, diethylmalonic acid, succinic acid, methylsuccinic acid, 2,2-dimethylsuccinic acid, 2-ethyl-2-methylsuccinic acid, 2,3-dimethylsuccinic acid, meso-2,3-dimethylsuccinic acid, glutaric acid, (+/-)-2-methylglutaric acid, 3-methylglutaric acid, 2,2-dimethylglutaric acid, 2,4-dimethylglutaric acid, 3,3-dimethylglutaric acid, adipic acid, 3-methyladipic acid, (R)-(+)-3-methyladipic acid, 2,2,5,5-tetramethylhexanedioic acid, pimelic acid, suberic acid, azelaic acid, 1,10-decanedicarboxylic acid, sebacic acid, 1,11-undecanedicarboxylic acid, undecanedioic acid, 1,12-dodecanedicarboxylic acid, hexadecanedioic acid, docosanedioic acid, tetracosanedioic acid, tricarballylic acid, beta-methyltricarballylic acid, 1,2,3,4-butanetetracarboxylic acid, itaconic acid, maleic acid, fumaric acid, citraconic acid, mesaconic acid, trans-glutatonic acid, trans-beta-hydromuconic acid, trans-traumatic acid, trans,trans-muconic acid, cis-aconitic acid, trans aconitic acid, (+/-)-chlorosuccinic acid, (+/-)-bromosuccinic acid, meso-2,3-dibromosuccinic acid, hexa fluoroglutaric acid, perfluoroadipic acid hydrate, dibromo-maleic acid, DL-malic acid, D-malic acid, L-malic acid, (R)-(-)-citramalic acid, (S)-(+)-citramalic acid, (+/-)-2-isopropylmalic acid, 3-hydroxy-3-methylglutaric acid, ketomalonic acid monohydrate, DL-tartaric acid, L-tartaric acid, D-tartaric acid, mucic acid, citric acid, citric acid monohydrate, dihydrofumaric acid hydrate, tetrahydrofuran-2,3,4,5-tetracarboxylic acid, mercaptosuccinic acid, meso-2,3-dimercaptosuccinic acid, thiodiglycolic acid, 3,3'-thiodipropionic acid, 3,3'-dithiodipropionic acid, 3-carboxypropyl disulfide, (+/-)-2-(carboxymethylthio) succinic acid, 2,2',2'',2'''-[1,2-ethanediylidenetetrakis(thio)]-tetrakisacetic acid, nitromethanetrispropionic acid, oxalacetic acid, 2-ketoglutaric acid, 2-oxoadipic acid hydrate, 1,3-acetonedicarboxylic acid, 3-oxoadipic acid, 4-ketopimelic acid, 5-oxoazelaic acid, chelidonic acid, 1,1-cyclopropanedicarboxylic acid, 1,1-cyclobutanedicarboxylic acid, (+/-)-trans-1,2-cyclobutanedicarboxylic acid, trans-DL-1,2-cyclopentanedicarboxylic acid, 3,3-tetramethyleneglutaric acid, (1R.3S)-(+)-camphoric acid, (1S.3R)-(-)-camphoric acid, (+/-)-cyclohexylsuccinic acid, 1,1-cyclohexanediacetic acid, (+/-)-trans-1,2-cyclohexanedicarboxylic acid, (+/-)-1,3-cyclohexanedicarboxylic acid, trans-1,2-cyclohexanedicarboxylic acid, 1,4-cyclohexanedicarboxylic acid, 1,3-adamantanedicarboxylic acid, 3-methylenecyclopropane-trans-1,2-dicarboxylic acid, cis-5-norbornene-endo-2,3-dicarboxylic acid, 1,3,5-cyclohexanetricarboxylic acid, 1,3,5-cyclohexanetricarboxylic acid, kemp's triacid, (1*alpha*.3*alpha*.5*beta*)-1,3,5-trimethyl-

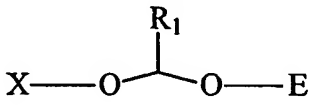
1,3,5-cyclohexanetricarboxylic acid, 1,2,3,4-cyclobutane-tetracarboxylic acid, 1,2,3,4,5,6-cyclo-hexanehexacarboxylic acid monohydrate, phenylmalonic acid, benzylmalonic acid, phenylsuccinic acid, 3-phenylglutaric acid, 1,2-phenylenediacetic acid, homophthalic acid,1,3-phenylenediacetic acid, 4-carboxyphenoxyacetic acid, 1,4-phenylenediacetic acid, 2,5-dihydroxy-1,4-benzenediacetic acid, 1,4-phenylenediacrylic acid, phthalic acid, isophthalic acid, 1,2,3-benzenetricarboxylic acid hydrate, terephthalic acid, 1,2,4-benzenetricarboxylic acid, 1,2,4,5-benzenetetracarboxylic acid, mellitic acid, 3-(carboxymethylaminomethyl)-4-hydroxybenzoic acid, 4-methylphthalic acid, 2-bromoterephthalic acid, 4-bromoisophthalic acid, 4-hydroxyisophthalic acid, 4-nitrophthalic acid, nitrophthalic acid, 1,4-phenylenedipropionic acid, 5-tert-butylisophthalic acid, 5-hydroxyisophthalic acid, 5-nitroisophthalic acid, 5-(4-carboxy-2-nitrophenoxy)-isophthalic acid, diphenic acid, 4,4'-biphenyldicarboxylic acid, 5,5'dithiobis(2-nitrobenzoic acid), 4-[4-(2carboxybenozoyl)phenyl]-butyric acid, pamoic acid, 1,4-naphthalenedicarboxylic acid, 2,3-naphthalenedicarboxylic acid, 2,6-naphthalenedicarboxylic acid, 1,4,5,8-naphthalene-tetracarboxylic acid hydrate, and 2,7-di-tert-butyl-9,9-dimethyl-4,5-xanthenedicarboxylic acid.

6. The composition of claim 4, wherein the vinyl ether is selected from the group consisting of cyclohexyl vinyl ether; 2-ethylhexyl vinyl ether; (4-vinyloxy)butyl benzoate; 4-(1-propenyloxymethyl)-1,3-dioxolan-2-one; diethyleneglycol divinyl ether; poly-THF-divinyl ether 290; polyoxyethylene divinyl ether; ethyleneglycol divinyl ether; tetraethyleneglycol divinyl ether; 1,3-benzenedicarboxylic acid, bis[4-(ethenyloxy)butyl]ester; pentanedioic acid, bis[[4-[(ethenyloxy)methyl]cyclohexyl]methyl]ester; butanedioic acid, bis[4-(ethenyloxy)butyl] ester; hexanedioic acid, bis[4-(ethenyloxy)butyl]ester; carbamic acid, (methylenedi-4,1-phenylene)bis-bis[4-(ethenyloxy)butyl] ester; carbamic acid, (4-methyl-1,3-phenylene)bis-, bis[4-(ethenyloxy) butyl] ester; 1,2,4-benzenetricarboxylic acid tris[4-(ethenyloxy) butyl] ester; 1,4-butanediol divinylether; nonadioldivinylether; cyclohexanediol divinylether; pentaerythritol-tetravinylether; 1,4-dipropenoxybutane; 1,6-dipropenoxyhexane; 1,6-dipropenoxyoctane; 1,10-dipropenoxydecane; diethyleneglycoldipropenyl ether; neopentylglycoldipropenyl ether; triethylenglycoldipropenyl ether; trimethylolpropanetripropenyl ether; 1,2,3-tripropenoxypropane; pentaerythritoltetrapropenyl ether; and sorbitolhexapropenyl ether.

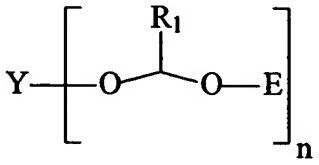
7. The composition of claim 4, wherein the carboxylic acid is a multifunctional carboxylic acid.

8. The composition of claim 4, wherein the vinyl ether is a multifunctional vinyl ether.

9. The composition of claim 1, wherein the composition is selected from a compound having one or more of the following structures I through VI:



I



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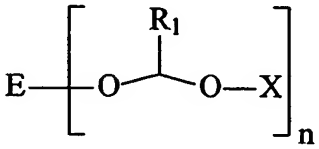

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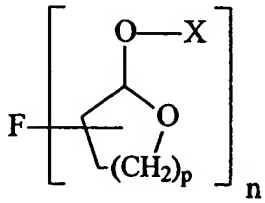

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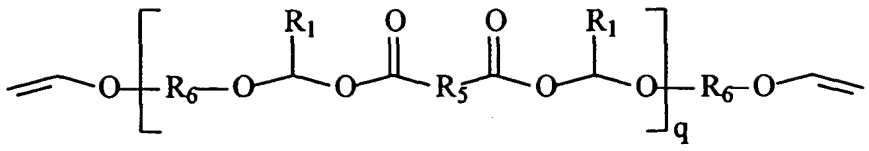

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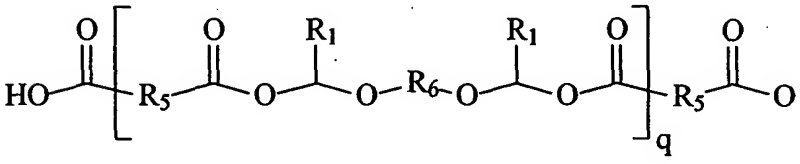
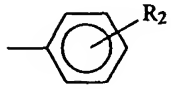
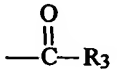
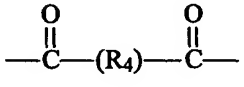
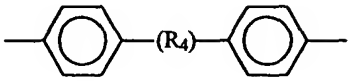


VI

wherein X denotes  or  ;

Y denotes  or  ;

E denotes a hydrocarbon, ether, thioether, ester, thioester, carbamate, amide, or a combination of these groups;

F denotes an organic group fragment derived from a multifunctional 1-cycloalkenyl ether in which the cyclic ether groups are linked though F, and may be a hydrocarbon, ether, thioether, ester, thioester carbamate, amide, or a combination of these groups;

R_1 represents a C_1-C_6 alkyl group;

R^2 and R^3 are independently selected from hydrogen, substituted or unsubstituted linear or branched C_{1-22} alkyl, alkenyl, aryl, alkaryl, cycloalkyl, alkoxy and phenyl;

R_4 is substituted or unsubstituted linear or branched C_{1-22} alkylene, alkenylene, arylene, alkylenearyl, cycloalkylene, alkyleneoxy and phenylene;

R_5 and R_6 are independently selected from linear or branched C_{1-22} alkylene, alkenylene, arylene, alkylenearyl, cycloalkylene, alkyleneoxy and phenylene;

n is an integer from 2-30; p represents the integer 1 or 2 and q is an integer from 5-30.

10. The composition of claim 9, wherein the groups E and F include a reactive group selected from the group consisting of oxirane, thiirane, hydroxyl, amino and mercapto.

11. A curable composition comprising:

(a) an epoxy resin;

(b) a latent fluxing agent which liberates a phenolic compound or a carboxylic acid containing compound when heated above 140°C; and

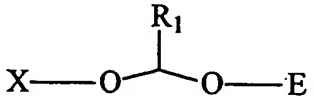
(c) a compound for effecting cure of the epoxy resin.

12. The composition of claim 11, wherein the latent fluxing agent is an α-alkoxyalkyl ester of a carboxyl-containing compound.

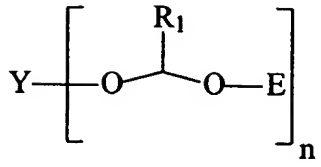
13. The composition of claim 11, wherein the latent fluxing agent is an α-alkoxyalkyl phenyl ether.

14. The composition of claim 11, wherein the latent fluxing agent comprises a reaction product of a carboxylic acid and a vinyl ether.

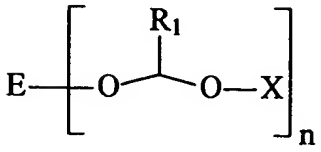
15. The composition of claim 11, wherein the latent fluxing agent comprises a composition selected from a compound having one or more of the following structures I through VI:



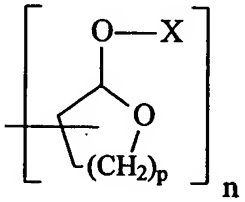
I



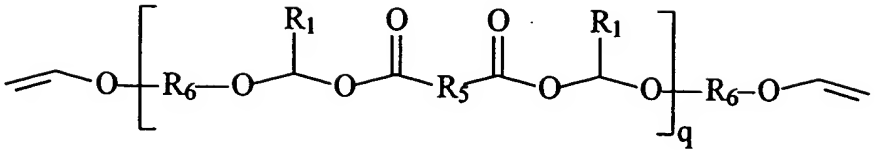
II



III



IV



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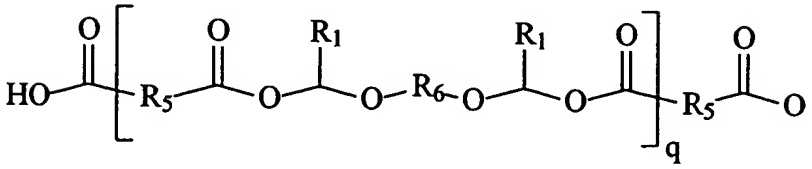
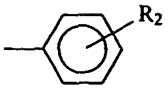
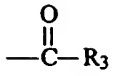
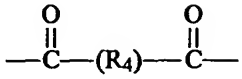
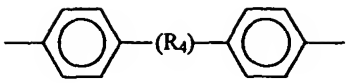


VI

wherein X denotes  or  ;

Y denotes  or  ;

E denotes an organic group derived from a 1-alkenyl ether and may be a hydrocarbon, ether, thioether, ester, thioester, carbamate, amide, or a combination of these groups;

F denotes an organic group fragment derived from a multifunctional 1-cycloalkenyl ether in which the cyclic ether groups are linked though F, and may be a hydrocarbon, ether, thioether, ester, thioester carbamate, amide, or a combination of these groups;

R_1 represents a C_1-C_6 alkyl group;

R^2 and R^3 are independently selected from hydrogen, substituted or unsubstituted linear or branched C_{1-22} alkyl, aryl, alkaryl, cycloalkyl, alkoxy and phenyl;

R_4 is substituted or unsubstituted linear or branched C_{1-22} alkylene, alkenylen, arylene, alkylenearyl, cycloalkylene, alkyleneoxy and phenylene;

R_5 and R_6 are independently selected from linear or branched C_{1-22} alkylene, alkenylene, arylene, alkylenearyl, cycloalkylene, alkyleneoxy and phenylene;

n is an integer from 2-30; p represents the integer 1 or 2 and q is an integer from 5-30.

16. The composition of claim 15, wherein the groups E and F include a reactive group selected from the group consisting of oxirane, thiirane, hydroxyl, amino and mercapto.

17. The composition of claim 11, wherein the epoxy resin in (a) is one or more selected from the group consisting of bisphenol-A-type epoxy resin, bisphenol-F-type epoxy resin, phenol novolac-type epoxy resin, cresol novolac-type epoxy resin, polyepoxy compounds based on aromatic amines and epichlorohydrin, polyglycidyl

derivatives of phenolic compounds, polyglycidyl derivatives of phenol-formaldehyde novolacs, polyglycidyl adducts of amines, aminoalcohols and polycarboxylic acids.

18. The composition of claim 11 wherein the compound for effecting cure of the epoxy resin in (c) comprises an epoxy curing agent or catalyst selected from the group consisting of anhydride compounds, amine compounds, amide compounds, imidazole compounds, polyfunctional phenols, carboxylic acids, thiols, and mixtures thereof.

19. The composition of claim 11, wherein the compound for effecting cure of the epoxy resin in (c) is 1,8-diazabicyclo[5.4.0]undec-7-ene.

20. The composition of claim 11 further comprising (d) an epoxy resin adduct of a carboxyl terminated toughening agent.

21. The composition of claim 20, wherein the epoxy resin adduct of a carboxyl terminated toughening agent comprises an epoxy resin adduct of a carboxyl terminated synthetic rubber.

22. The composition of claim 21, wherein the synthetic rubber is one or more selected from the group consisting of polybutadiene, styrene-butadiene rubber, butadiene-acrylonitrile rubber and acrylonitrile-butadiene-styrene rubber.

23. The composition of claim 11 further comprising an inorganic filler material.

24. The composition of claim 23, wherein the inorganic filler material is one or more selected from the group of materials constructed of or containing reinforcing silicas, aluminum oxide, silicon nitride, aluminum nitride, silica-coated aluminum nitride and boron nitride.

25. A thermoset resin comprising a reaction product of the composition of claim 11.

26. A one component curable composition comprising:

(a) from about 15 percent to about 75 percent, based on the total weight of the composition, of an epoxy resin;

(b) from about 10 percent to about 70 percent, based on the total weight of the composition, of a thermally labile compound selected from the group consisting of (a) an α-alkoxyalkyl ester reaction product of a carboxylic acid and a vinyl ether, and (b) an α-alkoxyalkyl phenyl ether reaction product of a phenolic acid and a vinyl ether;

(c) a compound for effecting cure of the epoxy resin selected from an epoxy curing agent in an amount of from about 0.15 to about 1.5 equivalents per equivalent of epoxide, or an epoxy curing catalyst in an amount of from about 0.02 percent to about 20 percent by weight of the epoxy component, or combinations thereof;

(d) from about 1 percent to about 70 percent, based on the total weight of the composition, of an inorganic filler material; and

(e) optionally, from about 1 percent to about 20 percent, based on the total weight of the composition, of an epoxy resin adduct of a carboxyl terminated toughening agent.

27. The composition of claim 26, wherein the thermally labile compound (b) includes one or more functional groups capable of reacting into a cured epoxy composition.

28. The composition of claim 27, wherein the thermally labile compound (b) includes an epoxy functional group.

29. A method for bonding a chip die, which has one or more solderable contacts, to a substrate comprising:

(a) placing the chip die in contact with the substrate;

(b) providing an underfill composition between the chip die and the substrate, the underfill composition comprising:

(i) an epoxy resin,

(ii) a latent fluxing agent which liberates a phenolic compound or a carboxylic acid-containing compound when heated above 140°C, and

(iii) a compound for effecting cure of the epoxy resin; and

(c) applying a temperature greater than 140°C to the substrate with the chip die and underfill composition, such that a phenolic compound or a carboxylic acid-containing compound is released, and reflow of the solderable contacts and curing of the underfill composition occur.

30. The method of claim 29, wherein the underfill composition is provided on the chip die prior to the step of placing the chip die in contact with the substrate.

31. The method of claim 29, wherein in the underfill composition, the latent fluxing agent in (ii) is selected from the group consisting of an α-alkoxyalkyl ester of a carboxyl-containing compound and an α-alkoxyalkyl phenyl ether.

32. The method of claim 29, wherein the temperature applied in (c) is applied using a solder reflow oven.

33. The method of claim 29, wherein the substrate is a ceramic substrate selected from the group consisting of Al_2O_3, SiN_3, mullite (Al_2O_3-SiO_2), polyimide, glass-reinforced epoxy, acrylonitrile-butadiene-styrene and phenolic substrates.

34. The method of claim 29, wherein the chip die is a flip chip.

35. An integrated circuit chip prepared using the method of claim 29.

36. An integrated circuit chip comprising a chip die having electrical contacts arranged in a predetermined pattern and capable of providing electrical

engagement with a carrier substrate, said circuit chip including an underfill composition surrounding said electrical contacts, said underfill composition comprising:

(a) an epoxy resin;

(b) a latent fluxing agent which liberates a compound containing a phenolic acid or a carboxylic acid when heated above 140°C; and

(c) a compound for effecting cure of the epoxy resin;

wherein the electrical contacts are flowable to provide electrical engagement with the carrier substrate and the underfill composition liberates a fluxing agent and cures to adhere said circuit chip to said carrier substrate when heated above 140°C.

37. The integrated circuit chip of claim 36, wherein the chip die is constructed of a material selected from the group consisting of silicon and germanium.

38. The integrated circuit chip of claim 36, wherein the chip die is coated with a material selected from the group consisting of polyimide-based material, polybenzocyclobutane-based material and a silicone nitride-based material.

39. The integrated circuit chip of claim 36, wherein the chip die is a flip chip.